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3   ABSTRACT OF THE DISCLOSURE

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5   A system and method that provides radio field strength modeling useful for determining cellular telephone site coverage. The system and method automate sampling procedures, collecting data at various monitoring points within a radio propagation coverage area. The collected data is then interpolated and spurious samples are eliminated. The resultant radio field strength data and respective location data is then analyzed using either a modified Newton second order gradient or a pseudo-exhaustive search method to modeling the field strength for convex and non-convex models, respectively. An iterative approach is used to facilitate the use of model constraints and to mitigate calibration errors attributable to highly correlated variables. For pseudo-exhaustive searches, noise is introduced into the data analysis routines to avoid convergence on local minimum which would otherwise inhibit convergence towards global solutions.